

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-80. (Cancelled)

81. (Currently amended) A method for vision correction, comprising:

inserting a lens into a pocket created, without creating an epithelial flap, between a corneal epithelium of an eye and Bowman's membrane of the eye, wherein the lens is secured to the eye with an adhesive.

82. (Previously presented) The method of claim 81, further comprising forming an incision in the epithelium to create the pocket.

83. (Original) The method of claim 82, wherein the step of forming an incision includes forming an incision on an approximate nasal portion, a temporal portion, a superior portion, and/or inferior portion of the epithelium.

84. (Previously presented) The method of claim 82, wherein the step of forming an incision includes forming an incision on an approximate medial portion of the epithelium to form a first pocket and a second pocket, each pocket sized to accommodate a portion of the lens.

85. (Previously presented) The method of claim 81, further comprising deforming the lens prior to the inserting step.

86. (Previously presented) The method of claim 81, further comprising removing the lens from the eye, and inserting another vision correcting lens into the pocket.

87-88. (Cancelled)

89. (Previously presented) The method of claim 81, wherein the lens comprises a synthetic material.

90. (Withdrawn) The method of claim 81, wherein the lens comprises a synthetic polymeric material.

91. (Original) The method of claim 81, wherein the inserting step occurs without forming an epithelial flap.

92. (Original) The method of claim 81, further comprising forming a plurality of incisions in the epithelium.

93. (Cancelled)

94. (Previously presented) The method of claim 81, wherein the inserting step occurs substantially without damaging Bowman's membrane.

95. (Previously presented) The method of claim 81, wherein the inserting step occurs substantially without damaging a portion of a stroma of the cornea of the eye.

96. (Original) The method of claim 81, further comprising administering a healing agent to the eye in an amount effective to promote healing of the epithelium.

97. (Previously presented) The method of claim 81, wherein the inserting step comprises lifting a portion of the epithelium from the cornea, forming an incision in the epithelium, and passing the lens through the incision.

98. (Original) The method of claim 97, wherein the epithelium is lifted using a vacuum.

99. (Withdrawn) The method of claim 97, wherein the epithelium is lifted by delivering a fluid beneath the epithelium.

100. (Original) The method of claim 81, further comprising applying an effective amount of an epithelium preserving agent to the epithelium.

101. (Original) The method of claim 100, wherein the epithelium preserving agent includes a gel.

102. (Original) The method of claim 100 wherein the epithelium preserving agent comprises a component selected from the group consisting of water soluble polymeric materials, water swellable polymeric materials and mixtures thereof.

103. (Original) The method of claim 100, wherein the epithelium preserving agent includes at least one cellulosic component.

104. (Original) The method of claim 103, wherein the epithelium preserving agent includes hydroxymethylcellulose.

105. (Previously presented) The method of claim 81, further comprising creating the pocket using a sharp blade to slice through the epithelium.

106. (Previously presented) The method of claim 81, further comprising creating the pocket using a blunt instrument to separate the epithelium substantially without slicing the epithelium.

107. (Previously presented) The method of claim 81, wherein the creating step comprises using a microkeratome.

108. (Original) The method of claim 106, wherein the blunt instrument is a spatula or a wire.

109-111. (Cancelled).

112. (Previously presented) The method of claim 99, wherein the fluid includes sodium chloride or other tonicity agent.

113. (Previously presented) The method of claim 99, wherein the fluid is a hypertonic aqueous liquid.

114-120. (Cancelled)

121. (Previously presented) The method of claim 81, further comprising:

applying a liquid to the corneal epithelium, the liquid being effective in loosening the epithelium substantially without killing epithelial cells;

treating the epithelium to provide or maintain the epithelium in a moisturized state;

raising a portion of the loosened, moisturized epithelium from a surface of a cornea of an eye located below the epithelium;

separating the raised portion of the epithelium from the surface of the cornea;

forming one or more incisions in the raised portion of the epithelium to accommodate the lens.

122. (Original) The method of claim 121, wherein the steps occur sequentially.

123. (Previously presented) The method of claim 121, further comprising, prior to the forming step, delivering a substance beneath the raised portion of the corneal epithelium to maintain a spaced apart relationship between the epithelium and Bowman's membrane.

124. (Previously presented) The method of claim 121, wherein the liquid that is applied includes sodium chloride or other tonicity agent.

125. (Original) The method of claim 121 wherein the liquid that is applied is a hypertonic aqueous liquid.

126. (Original) The method of claim 121, further comprising scoring a portion of the epithelium to create an epithelial defect prior to applying the liquid.

127. (Original) The method of claim 121, wherein the treating step comprises applying a gel to the epithelium.

128. (Original) The method of claim 127, wherein the gel-containing composition comprises a component selected from the group consisting of water soluble polymeric materials, water swellable polymeric materials and mixtures thereof.

129. (Original) The method of claim 127, wherein the gel-containing composition comprises at least one cellulosic component.

130. (Original) The method of claim 129 wherein the gel-containing composition comprises hydroxymethylcellulose.

131. (Cancelled)

132. (Original) The method of claim 121, wherein the step of separating the epithelium from the surface of the cornea includes using a blunt dissection apparatus.

133. (Cancelled)

134. (Original) The method of claim 121, wherein the substance that is delivered to beneath the raised portion of the epithelium is a gel-containing composition.

135. (Original) The method of claim 134, wherein the gel-containing composition comprises a component selected from the group consisting of water soluble polymeric materials, water swellable polymeric materials and mixtures thereof.

136. (Original) The method of claim 134, wherein the gel-containing composition comprises a cellulosic component

137. (Original) The method of claim 134, wherein the gel-containing composition includes hydroxymethylcellulose.

138. (Cancelled)

139. (Cancelled)

140. (Original) The method of claim 121, wherein the forming step comprises forming a plurality of incisions in the raised portion of the epithelium.

141-149. (Cancelled)

150. (Previously presented) The method of claim 81, further comprising administering a moisturizer to the epithelium effective in providing and/or maintaining the epithelium in a moisturized state.

151-159. (Cancelled)

160. (Previously presented) The method of claim 81, further comprising:

applying a liquid to the corneal epithelium, the liquid being effective in loosening the epithelium substantially without killing epithelial cells;

raising a portion of the loosened epithelium from a surface of a cornea of an eye located below the epithelium;

separating the raised portion of the epithelium from the surface of the cornea;

delivering a substance beneath the raised portion of the epithelium to maintain a spaced apart relationship between the epithelium and the surface of the cornea;

forming one or more elongated incisions in the raised portion of the epithelium to accommodate the lens.

161. (Previously presented) The method of claim 160, wherein the liquid that is applied includes sodium chloride or other tonicity agent.

162. (Original) The method of claim 160, wherein the liquid that is applied is a hypertonic aqueous liquid.

163. (Original) The method of claim 160, further comprising scoring a portion of the epithelium to create an epithelial defect prior to applying the liquid.

164. (Original) The method of claim 160, wherein the step of raising a portion of the epithelium includes using a vacuum.

165. (Original) The method of claim 160, wherein the step of separating the epithelium from the surface of the cornea includes using a blunt dissection apparatus.

166. (Original) The method of claim 165, wherein the blunt dissection apparatus comprises a spatula or a wire.

167. (Original) The method of claim 160, wherein the substance that is delivered to beneath the raised portion of the epithelium is a gel-containing composition.

168. (Original) The method of claim 167, wherein the gel-containing composition comprises a component selected from the group consisting of water soluble polymeric materials, water swellable polymeric materials and mixtures thereof.

169. (Original) The method of claim 167, wherein the gel-containing composition comprises at least one cellulosic component.

170. (Original) The method of claim 169, wherein the gel-containing composition includes hydroxymethylcellulose.

171. (Original) The method of claim 160, wherein the one or more incisions are formed using a microkeratome.

172. (Cancelled)

173. (Original) The method of claim 160, wherein the forming step comprises forming a plurality of incisions in the raised portion of the epithelium.

174-176. (Cancelled)

177. (Original) The method of claim 160, further comprising applying a healing agent to the epithelium at the one or more incisions.

178. (Previously presented) The method of claim 81, further comprising applying an aqueous fluid to the eye.

179. (Previously presented) The method of claim 178, wherein the aqueous fluid is selected from the group consisting of water and saline.

180. (Previously presented) The method of claim 178, further comprising cooling the corneal epithelium.

181. (Cancelled)

182. (Previously presented) The method of claim 81, wherein the adhesive is a biodegradable glue.

183. (Previously presented) The method of claim 81, wherein the lens comprises a cellular attachment element.

184. (Previously presented) The method of claim 81, wherein the lens comprises an agent selected from the group consisting of growth factors, extracellular matrix proteins, fragments thereof, and combinations thereof.

185. (Previously presented) The method of claim 81, wherein the lens comprises collagen.

186. (Previously presented) The method of claim 81, wherein the lens comprises recombinant collagen.

187. (Withdrawn) The method of claim 81, wherein the lens comprises collagen and a synthetic polymeric material.

188. (Previously presented) The method of claim 81, wherein the lens is free of donor corneal tissue.

189. (Withdrawn) The method of claim 81, wherein the lens comprises collagen Type I.

190. (Previously presented) The method of claim 81, wherein the lens comprises collagen other than collagen Type I.

191. (Previously presented) The method of claim 81, further comprising forming a blister that includes the corneal epithelium.

192. (Previously presented) The method of claim 191, wherein the forming step comprises applying a fluid to the corneal epithelium.

193. (Previously presented) The method of claim 191, wherein the forming step comprises applying a chemical to the corneal epithelium.

194. (Currently amended) A method for vision correction, comprising:

cooling a corneal epithelium of an eye; and



inserting a lens into a pocket created, without creating an epithelial flap, between the corneal epithelium and Bowman's membrane of the eye, wherein the lens is secured to the eye with an adhesive.

195. (Previously presented) The method of claim 194, wherein the cooling is effective in protecting corneal epithelial cells of the corneal epithelium from cellular injury resulting from creation of the pocket.

196. (Previously presented) The method of claim 194, wherein the pocket is created using a separator, and the separator is cooled to cool the corneal epithelium.

197. (Previously presented) The method of claim 194, further comprising applying an aqueous liquid to the eye.

198. (Previously presented) The method of claim 197, wherein the aqueous liquid is selected from the group consisting of water and saline.

199. (Cancelled)

200. (Previously presented) The method of claim 194, wherein the adhesive is a biodegradable glue.

201. (Previously presented) The method of claim 194, further comprising forming a blister that comprises the corneal epithelium.

202. (Previously presented) The method of claim 194, wherein the lens comprises collagen.

203. (Previously presented) The method of claim 194, wherein the lens comprises recombinant collagen.

204. (Withdrawn) The method of claim 194, wherein the lens comprises a synthetic polymeric material.

205. (Withdrawn) The method of claim 194, wherein the lens comprises collagen and a synthetic polymeric material.

206. (Previously presented) The method of claim 194, wherein the lens is free of donor corneal tissue.

207. (Withdrawn) The method of claim 194, wherein the lens comprises collagen Type I.

208. (Previously presented) The method of claim 194, wherein the lens comprises collagen other than collagen Type I.

209. (Previously presented) The method of claim 194, wherein the lens comprises a cellular attachment element.

210. (Previously presented) The method of claim 194, wherein the lens comprises an agent selected from the group consisting of growth factors, extracellular matrix proteins, fragments thereof, and combinations thereof.

211. (Previously presented) The method of claim 194, further comprising creating the pocket using a microkeratome.

212. (Currently amended) A method for vision correction, comprising:

inserting a lens into a pocket created, without creating an epithelial flap, between a corneal epithelium of an eye and Bowman's membrane of the eye; and

applying an effective amount of an epithelium preserving agent to the epithelium, wherein the epithelium preserving agent includes at least one cellulosic component.

213. (Previously presented) The method of claim 212, wherein the epithelium preserving agent includes hydroxymethylcellulose.

214. (Currently amended) A method for vision correction, comprising:

applying a liquid to a corneal epithelium of an eye, the liquid being effective in loosening the epithelium substantially without killing epithelial cells;

treating the epithelium to provide or maintain the epithelium in a moisturized state, wherein the treating step comprises applying a gel to the epithelium;

raising a portion of the loosened, moisturized epithelium from Bowman's membrane of the eye;

separating the raised portion of the epithelium from the Bowman's membrane;

forming one or more incisions in the raised portion of the epithelium to create a pocket, without creating an epithelial flap, between the corneal epithelium and Bowman's membrane; and

inserting a lens into the pocket.

215. (Previously presented) The method of claim 214, wherein the gel-containing composition comprises a component selected from the group consisting of water soluble polymeric materials, water swellable polymeric materials and mixtures thereof.

216. (Previously presented) The method of claim 214, wherein the gel-containing composition comprises at least one cellulosic component.

217. (Previously presented) The method of claim 216, wherein the gel-containing composition comprises hydroxymethylcellulose.

218. (Currently amended) A method for vision correction, comprising:

applying a liquid to a corneal epithelium of an eye, the liquid being effective in loosening the epithelium substantially without killing epithelial cells;

raising a portion of the loosened epithelium from Bowman's membrane of the eye;

separating the raised portion of the epithelium from Bowman's membrane;

delivering a gel-containing composition beneath the raised portion of the epithelium to maintain a spaced apart

relationship between the epithelium and the surface of the cornea;

forming one or more elongated incisions in the raised portion of the epithelium to create a pocket, without creating an epithelial flap, between the corneal epithelium and Bowman's membrane, without creating an epithelial flap; and

inserting a lens into the pocket.

219. (Previously presented) The method of claim 218, wherein the gel-containing composition comprises a component selected from the group consisting of water soluble polymeric materials, water swellable polymeric materials and mixtures thereof.

220. (Previously presented) The method of claim 218, wherein the gel-containing composition comprises at least one cellulosic component.

221. (Previously presented) The method of claim 220, wherein the gel-containing composition includes hydroxymethylcellulose.